

ABSTRACT OF THE DISCLOSURE

A device for easily determining whether a rare short circuit, which results from the generation of heat exceeding a predetermined value, has occurred in a load circuit. The device includes a fuse for detecting a load current that flows through the load circuit and generates a detection signal. A determination circuit is connected to the fuse to determine whether a rare short circuit has occurred. The determination circuit calculates one of a first parameter and a second parameter based on the detection signal. The first parameter relates to a first time period during which the load current exceeds a predetermined reference current value. The second parameter relates to a second time period during which the load current is less than or equal to the predetermined reference current value. The determination circuit cumulates one of the parameters every predetermined time interval to calculate a cumulative parameter value and determines whether a rare short circuit has occurred based on the cumulative parameter value.